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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,778	12/28/2001	Hiroaki Tanaka	GNE463A	4276

466 7590 09/05/2003

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EXAMINER

ERDEM, FAZLI

ART UNIT PAPER NUMBER

2826

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/028,778

Applicant(s)

TANAKA ET AL.

Examiner

Fazli Erdem

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All   b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (6,489,632) in view of Murakami et al. (US 2003/0057419) further in view of Yamazaki et al. (6,589,822) further in view of Kaneko et al. (6,433,842) further in view of Ohkawara et al. (6,504,585).

Regarding Claims 1-11 Yamazaki et al. (6,489,632) disclose a semiconductor device having a gate oxide film where a semiconductor device and a method of fabricating the same characterized in that impurity regions are selectively formed on a semiconductor substrate or semiconductor thin film and are activated by radiating laser beams or a strong light equivalent from above so that the laser beams or the equivalent strong light are radiated onto the impurity regions and on a boundary between the impurity region and an active region adjoining the impurity region. Yamazaki et al. (6,489,632) fail to disclose the required nitrogen concentration, multilayer structure, scanning line structure, and common line structures. However, Murakami et al. disclose a semiconductor device comprising a thin film transistor and method of manufacturing the same where the required nitrogen concentration is disclosed. Furthermore, Yamazaki et al. (6,589,822) disclose a manufacturing method for top-gate type and bottom-gate type thin film transistors where the required multilayer structure is disclosed. Kaneko et al.

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disclose a liquid crystal display device and method of manufacturing the same where the required scanning line is disclosed. Finally, Ohkawara et al. disclose a liquid crystal display device having a pattern varying the overlap of a light-shield film connected to the neighboring gate line and the pixel electrode to improve voltage difference between different pixel electrodes where the required common line is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required nitrogen concentration, multilayer structure, scanning line structure and the common line structure in Yamazaki et al. ((6,489,632) as taught by Murakami et al, Yamazaki et al. (6,589,822), Kaneko et al., and Ohkawara et al. respectively in order to have a liquid crystal display device with better performance.

2. Claims 12-21 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (6,489,632) in view of Yamazaki et al. (6,583,471) further in view of Yamazaki et al. (6,589,822) further in view of Kaneko et al. (6,433,842) further in view of Ohkawara et al. (6,504,585).

Regarding Claims 12-21 Yamazaki et al. (6,489,632) disclose a semiconductor device having a gate oxide film where a semiconductor device and a method of fabricating the same characterized in that impurity regions are selectively formed on a semiconductor substrate or semiconductor thin film and are activated by radiating laser beams or a strong light equivalent from above so that the laser beams or the equivalent strong light are radiated onto the impurity regions and on a boundary between the impurity region and an active region adjoining the impurity region. Yamazaki et al. (6,489,632) fail to disclose the required nitrogen concentration,

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multilayer structure, scanning line structure, and common line structures. However, Yamazaki et al. (6,583,471) disclose a semiconductor device comprising a thin film transistor and method of manufacturing the same where the required nitrogen concentration is disclosed. Furthermore, Yamazaki et al. (6,589,822) disclose a manufacturing method for top-gate type and bottom-gate type thin film transistors where the required multilayer structure is disclosed. Kaneko et al. disclose a liquid crystal display device and method of manufacturing the same where the required scanning line is disclosed. Finally, Ohkawara et al. disclose a liquid crystal display device having a pattern varying the overlap of a light-shield film connected to the neighboring gate line and the pixel electrode to improve voltage difference between different pixel electrodes where the required common line is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required nitrogen concentration, multilayer structure, scanning line structure and the common line structure in Yamazaki et al. ((6,489,632) as taught by Yamazaki et al. (6,583,471) Yamazaki et al. (6,589,822), Kaneko et al., and Ohkawara et al. respectively in order to have a liquid crystal display device with better performance.

3. Claims 22-34 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (6,489,632) in view of Murakami et al. (US 2003/0057419) further in view of Yamazaki et al. (6,589,822) further in view of Yamamoto et al. (6,226,059) further in view of Ohkawara et al. (6,504,585).

Regarding Claims 22-34 Yamazaki et al. (6,489,632) disclose a semiconductor device having a gate oxide film where a semiconductor device and a method of fabricating the same

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characterized in that impurity regions are selectively formed on a semiconductor substrate or semiconductor thin film and are activated by radiating laser beams or a strong light equivalent from above so that the laser beams or the equivalent strong light are radiated onto the impurity regions and on a boundary between the impurity region and an active region adjoining the impurity region. Yamazaki et al. (6,489,632) fail to disclose the required nitrogen concentration, multilayer structure, scanning line structure, and common line structures. However, Murakami et al. disclose a semiconductor device comprising a thin film transistor and method of manufacturing the same where the required nitrogen concentration is disclosed. Furthermore, Yamazaki et al. (6,589,822) disclose a manufacturing method for top-gate type and bottom-gate type thin film transistors where the required multilayer structure is disclosed. Yamamoto et al. disclose a liquid crystal display device and method of manufacturing the same where the required scanning line is disclosed. Finally, Ohkawara et al. disclose a liquid crystal display device having a pattern varying the overlap of a light-shield film connected to the neighboring gate line and the pixel electrode to improve voltage difference between different pixel electrodes where the required common line is disclosed.

It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required nitrogen concentration, multilayer structure, scanning line structure and the common line structure in Yamazaki et al. (6,489,632) as taught by Murakami et al., Yamazaki et al. (6,589,822), Yamamoto et al., and Ohkawara et al. respectively in order to have a liquid crystal display device with better performance.

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4. Claims 35-53 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al. (6,489,632) in view of Murakami et al. (US 2003/0057419) further in view of Yamazaki et al. (6,589,822) further in view of Yamamoto et al. (6,226,059) further in view of Ohkawara et al. (6,249,325).

Regarding Claims 35-53 Yamazaki et al. (6,489,632) disclose a semiconductor device having a gate oxide film where a semiconductor device and a method of fabricating the same characterized in that impurity regions are selectively formed on a semiconductor substrate or semiconductor thin film and are activated by radiating laser beams or a strong light equivalent from above so that the laser beams or the equivalent strong light are radiated onto the impurity regions and on a boundary between the impurity region and an active region adjoining the impurity region. Yamazaki et al. (6,489,632) fail to disclose the required nitrogen concentration, multilayer structure, scanning line structure, and common line structures. However, Murakami et al. disclose a semiconductor device comprising a thin film transistor and method of manufacturing the same where the required nitrogen concentration is disclosed. Furthermore, Yamazaki et al. (6,589,822) disclose a manufacturing method for top-gate type and bottom-gate type thin film transistors where the required multilayer structure is disclosed. Yamamoto et al. disclose a liquid crystal display device and method of manufacturing the same where the required scanning line is disclosed. Finally, Ohkawara et al. disclose a liquid crystal display device having a pattern varying the overlap of a light-shield film connected to the neighboring gate line and the pixel electrode to improve voltage difference between different pixel electrodes where the required common line is disclosed.

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It would have been obvious to one of having ordinary skill in the art at the time the invention was made to include the required nitrogen concentraion, multilayer structure, scanning line structure and the common line structure in Yamazaki et al. ((6,489,632) as taught by Murakami et al, Yamazaki et al. (6,589,822), Yamamoto et al., and Ohkawara et al. respectively in order to have a liquid crystal display device with better performance.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fazli Erdem whose telephone number is (703) 305-3868. The examiner can normally be reached on M - F 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

FE

  
**Minhloan Tran**  
**Primary Examiner**  
**Art Unit 2826**